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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,967	12/21/2001	James Chow	01-S-078	7501

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EXAMINER	
PHU, PHUONG M	

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/037,967	CHOW ET AL.	
	Examiner	Art Unit	
	Phuong Phu	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 December 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/21/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "diode-connected transistor" (claimed in claim 6) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 6-9 and 16-18 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

Claim 6 omits functional/structural/connectional interrelationships of "load elements" and "diode-connected transistor" with other claimed elements, e.g., "differential data signal", "first strobe signal", "output of the latch circuit", "second strobe signal", etc. (claimed in claim 1), for making the claimed "differential data sampling circuit" as a complete operational/connectional circuit.

Similarly, claims 7 and 16 omit functional/structural/connectional interrelationships of "input branch", "latch branch" and "bias current control transistor" with other claimed elements, e.g., "differential data signal", "first strobe signal", "output of the latch circuit", "second strobe signal, etc. (claimed in claim 1 or 12), for making the claimed "differential data sampling circuit" as a complete operational/connectional circuit.

Similarly, claims 8 and 17 omit functional/structural/connectional interrelationships of "pair of differential input transistor" and "strobe transistor" with other claimed elements, e.g.,

"differential data signal", "first strobe signal", "output of the latch circuit", "second strobe signal, "input branch", "latch branch", "bias current control transistor", etc. (claimed in claims 1 and 7, or claims 12 and 16), for making the claimed "differential data sampling circuit" as a complete operational/connectional circuit.

Similarly, claims 9 and 18 omit functional/structural/connectional interrelationships of "bias voltage" with other claimed elements, e.g., "differential data signal", "first strobe signal", "output of the latch circuit", "second strobe signal, etc. (claimed in claim 1 or 12), for making the claimed "differential data sampling circuit" as a complete operational/connectional circuit.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1-3, 5-14, 16-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al (6,538,486).

-Regarding to claims 1 and 12, see figures 1 and 2, and col. 1, lines 10-40 and col. 2, line 18 to col. 3, line 40, Chen et al discloses a system (see figure 2) comprises:

a latch circuit (18) for sampling a differential data signal (V_{IN}) in response to a first strobe signal (being derived from (22)); and

a strobe circuit (20) coupled to the latch circuit, the strobe circuit capturing the output of the latch circuit based on a second strobe signal (being derived from (22)).

-Regarding to claims 2 and 13, in Chen et al system, discloses that the latch circuit (see figure 1) produces a voltage change at output (V_{OUT}) that is inherently less than the voltage difference between a power supply voltage (Vc) that supplies the latch circuit and ground since, as shown in figure 1, the voltage difference is equal power supply voltage (Vc), and the output (V_{OUT}), as being derived from the supply voltage (Vc), is less than power supply voltage (Vc), namely less than the voltage difference.

-Regarding to claims 3 and 14, Chen et al discloses the latch circuit (18) (see figures 2 and 1)) is an analog latch circuit comprising analog devices (see figure 1) that latches or holds the differential data signal (V_{IN}, V^{-}_{IN}) in response to the first strobe signal (Clk, Clk^{-}) so as to produce a latched voltage (V_{OUT}, V^{-}_{OUT}) (see col. 1, lines 10-30) , and the strobe circuit (20) (see figures 2 and 1) samples and holds the latched voltage in order to determine a logic level of the differential data signal (see figure 1, and col. 1, lines 10-30).

-Regarding to claim 5, Chen et al discloses that the first strobe signal and the second strobe signal are the same signal (Clk) (see figure 2).

-Regarding to claim 6, Chen et al discloses that the latch circuit includes load elements ((R,7), (R,6)), and each of the load elements includes a transistor (6, 7).

-Regarding to claims 7 and 16, Chen et al discloses that the latch circuit (see figure 1) includes: an input branch (2) and a latch branch (5) connected in parallel; and a bias current control transistor (including transistors and (I_0)) coupled in series with both the input branch and the latch branch.

-Regarding to claims 8 and 17, Chen et al discloses that the input branch of the latch circuit includes: a pair of differential input transistors (2); and a single strobe transistor coupled in series with the pair of differential input transistors (see figure 1).

-Regarding to claims 9 and 18, Chen et al discloses that the latch circuit receives only one bias voltage (Vc) (see figure 1).

-Regarding to claims 10 and 19, Chen et al discloses that a buffer (16) having an output coupled to the input of the latch circuit (18), the buffer receiving a differential input signal (see figure 2).

-Regarding to claims 11 and 20, Chen et al discloses that the differential input signal received by the buffer is composed of a single input data signal (V_{OUT}) and a reference voltage (V_{OUT}), being outputted from (14) (see figures 2 and 14).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al.

-Regarding to claims 4 and 15, Chen et al does not discloses that the first strobe signal is delayed to produce a second strobe signal.

However, using a delay to delay a signal in order to match the signal with another signal is well-known in the art, and the examiner takes Official Notice.

Chen et al discloses that the first strobe signal is derived or split from the second strobe signal and the second strobe signal is derived from the clock (22), and the first strobe signal and second strobe signal are equal with the clock (22) (see figure 2) so that the latch circuit and the strobe circuit are triggered by the clock (22) (see col. 2, lines 18-22); in another word, the first strobe signal and second strobe signal must be in-phase or matched with each other and equal the clock (22).

It would have been obvious for one skilled in the art, when building or carrying out Chen et al invention, within his skills, to implement a delay to delay the second strobe after it being split from the first strobe (i.e., the first strobe signal is delayed by the delay to produce the second strobe signal) in order to match the second strobe at the strobe circuit with the first strobe at the latch circuit if during electrically laying out Chen et al invention, the second strobe at the strobe circuit is found leading the first strobe at the latch circuit.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (6:30-2:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phuong Phu
Primary Examiner
Art Unit 2631

PHUONG PHU
PRIMARY EXAMINER

Phuong Phu
03/18/05